

AMENDMENT

U.S. Appln. No. 09/750,576

5000-1-181

Please replace the paragraph beginning on page 13, line 4 with the following rewritten paragraph:

A12 Referring to FIG. 8, the amplitude mask 36, to which the light injected from the plano-concave lens 35 is incident, has a thickness of t_2 . The width of the light projected through the injecting surface 52 of the amplitude mask 36 is slightly variable even if the slit 41 becomes distant from the optical axis 38. Such a phenomenon is attributable to the fact that the area where the light incident on the slit 41 crosses the inner wall 42 thereof is reduced even if the angle formed by the light incident on the slit 41 with respect to the optical axis 38 is the same as before varying the thickness of the amplitude mask 36. Thus, the apodizing degree of the optical fiber grating according to the present invention is varied by adjusting the thickness of the amplitude mask 36.

IN THE CLAIMS:

Please amend the following claims:

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1. (Amended) A method for fabricating an apodized optical fiber grating using an ultraviolet light source, a lens system for converging the light incident from the ultraviolet light source, an

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amplitude mask for selectively transmitting therethrough the ultraviolet light incident from the lens system onto an optical fiber, the method comprising the steps of:

(a) setting a period of the apodized optical fiber formed on the optical fiber and setting a width of each stripe of the apodized optical fiber grating;

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(b) setting a longitudinal ratio, which is a ratio of the distance between a converging point of the lens system and the amplitude mask and the distance between the converging point of the lens system and the optical fiber;

(c) setting a period of the amplitude mask so as to equalize a transverse ratio, which is a ratio of the period of the amplitude mask and the period of the apodized optical fiber grating, with the longitudinal ratio set in step (b); and

(d) setting a thickness of the amplitude mask so as to match the stripe pattern of the apodized optical fiber grating set in step (a) with a pattern of a light distribution on light exit surface of the amplitude mask.

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2. (Amended) The fabrication method of claim 1, wherein the ultraviolet light source comprises an excimer laser.

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3. (Amended) The method of Claim 1, wherein the lens system comprises at least one cylindrical convex lens and at least one concave lens.

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4. (Amended) The method of Claim 3, wherein said converging point of the lens system is adjusted by selectively varying a distance between the at least one cylindrical convex lens and the at least one concave lens.

5. (Amended) The method of Claim 1, wherein the step (a) further comprises exposing the ultraviolet light through the amplitude mask.

6. (Amended) The method of claim 1, wherein step (d) further comprises exposing the ultraviolet light through the amplitude mask.

7. (Amended) The method of claim 1, wherein a width of each slit of the amplitude mask is substantially greater than the wavelength of the incident light transmitted from the lens system.